

## VPDES PERMIT FACT SHEET

This document gives the pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a **Minor, Municipal** permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq. The discharge results from treatment of kitchen and sanitary waste from Thaxton Elementary School by a septic tank and sand filter system with nitrification, chlorination, and dechlorination. The permit action consists of updating boilerplate and revising ammonia limitations. (SIC Code: 4952)

1. **Facility Name and Address:**

**Thaxton Elementary School STP**  
1245 Thaxton School Road  
Bedford, Virginia 24523

Location: at intersection of Rts. 831 and 861 in Thaxton, Bedford County, Virginia

2. **Permit No:** VA0020869 Existing Permit Expiration Date: July 6, 2008

3. **Owner Contact:** Name: Mr. Dennis W. Overstreet Title: Director of Maintenance  
Telephone No: (540)586-1045 ext. 237

4. **Application Complete Date:** January 4, 2008

**Permit Drafted By:** Kevin A. Harlow Date: May 19, 2008

DEQ Regional Office: West Central Regional Office

Reviewer's Signature:  Date: 5/27/08

Public Comment Period Dates: 6/4/2008 – 7/5/2008

5. **Receiving Waters Classification:**

Receiving Stream: Unnamed Tributary to Wolf Creek River Basin: Roanoke River

River Subbasin: Roanoke River Section: 5a Class: III Special Standards: PWS

7-Day, 10-Year Low Flow: 0.0 MGD 7-Day, 10-Year High Flow: 0.0 MGD

1-Day, 10-Year Low Flow: 0.0 MGD 1-Day, 10-Year High Flow: 0.0 MGD

30-Day, 5-Year Low Flow: 0.0 MGD Tidal: No 303(d) Listed: No

**Attachment A** contains a copy of the flow frequency determination memorandum.

6. **Operator License Requirements:** None

7. **Reliability Class:** I

8. **Permit Characterization:**

( ) Private ( ) Interim Limits in Other Document ( ) Federal ( ) Possible Interstate Effect  
( ) State (X) POTW ( ) PVOTW

9. **Wastewater Treatment System:** A description of the wastewater treatment system is provided below. See **Attachment B** for wastewater treatment schematics and **Attachment C** for a copy of the site visit report. **Table I** lists the treatment units associated with the discharge.

The system is a 3,500 gallon-per-day biological treatment system which includes a grease trap, septic tanks, dosing tank with dual alternating siphons, distribution box, three sand filters operated in parallel, a nitrification unit, a chlorine contact tank, and tablet dechlorination.

10. **Sewage Sludge Use or Disposal:** No biosolids are generated by this facility as defined in 12 VAC 5-585-10 et seq. Septage from the septic tanks is regularly pumped and hauled for further treatment at the Roanoke Regional Water Pollution Control Plant.
11. **Discharge Location Description:** A USGS topographic map which indicates the proposed discharge location, any significant dischargers, any water intakes, and other items of interest is included in **Attachment D**. The latitude and longitude of the proposed discharge is N 37° 21' 17", E 79° 36' 28".

Name of Topo: Bedford Number: 108D

12. **Material Storage:** Chlorine and a dechlorination material will be stored on site in a locked storage unit.
13. **Ambient Water Quality Information:** Memoranda or other information which helped to develop permit conditions are listed below.

The facility discharges into an unnamed tributary to Wolf Creek. See **Attachment A** for a summary of the flow frequencies. The UT to Wolf Creek is in the Middle Goose Creek/Bore Auger Creek/Wolf Creek Watershed (VAW-L21R) as described in the 2006 305(b)/303(d) Integrated Report (**Attachment E**). This section of the watershed has not been assessed.

14. **Antidegradation Review and Comments:** Tier I \_\_\_\_ Tier II X Tier III \_\_\_\_

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier I or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier II water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier II waters is not allowed without an evaluation of the economic and social impacts. Tier III water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with Tier determination. Although the receiving stream, an unnamed tributary to Wolf Creek, is not listed on Part I of the 303(d) list for exceedance of water quality criteria, it is within the Goose Creek Watershed (VAW-L21R) that is scheduled to have a TMDL developed by 2016 to address bacteria impairment. Guidance Memorandum 00-2011 states that non-attainment of the bacteria criteria is not to be "used to establish the tier category of a water unless there is clear and convincing evidence that the elevated bacteria numbers are due to inadequately disinfected human waste." The 305(b)/303(d) Integrated Report (**Attachment E**) lists the impairment sources as livestock, unspecified domestic waste, wastes from pets, and wildlife other than waterfowl. Therefore the unnamed tributary to Big Wolf Creek is considered to be a Tier 2 water.



For purposes of aquatic life protection in Tier II waters, “significant degradation” means that no more than 25 percent of the difference between the acute and chronic aquatic criteria values and the existing quality (unused assimilative capacity) may be allocated. For purposes of human health protection, “significant degradation” means that no more than 10 percent of the difference between the human health criteria and the existing quality (unused assimilative capacity) may be allocated. The antidegradation baseline for aquatic life and human health are calculated for each pollutant as follows:

**Antidegradation baseline (aquatic life) = 0.25 (WQS – existing quality) + existing quality**

**Antidegradation baseline (human health) = 0.10 (WQS – existing quality) + existing quality**

Where:

“WQS” = Numeric criterion listed in 9 VAC 25-260-5 et seq. for the parameter analyzed

“Existing quality” = Concentration of the parameter being analyzed in the receiving stream

These “antidegradation baselines” become the new water quality criteria in Tier II waters and effluent limits for future expansions or new facilities must be written to maintain the antidegradation baselines at the perennial point for each pollutant. Antidegradation baselines have been calculated as described above and included in **Attachment F**.

Water quality based effluent limits for pH, total residual chlorine (TRC) and ammonia have been established in compliance with antidegradation requirements set forth in 9 VAC 25-260-30 of the water quality standards regulations.

15. **Site Inspection:** Date: 02/08/2008 Performed by: Kevin Harlow  
**Attachment C** contains a copy of the site visit memorandum.
16. **Effluent Screening and Limitation Development:** DEQ Guidance Memorandum 00-2011 was used in developing all water quality based limits pursuant to water quality standards (9 VAC 25-260-5 et seq). Refer to **Attachment F** for the wasteload allocation spreadsheet and effluent limit calculations. See **Table III** for a summary of final limits and monitoring requirements.

**A. Mixing Zone**

Since the facility discharges to a dry railroad ditch with a 7Q10 of 0.0 MGD, there is no stream flow for mixing.

**B. Effluent Limitations for Conventional Pollutants**

**Flow** -- The permittee submitted a VPDES Permit Application for a design flow of 0.0035 MGD. Flow is to be estimated and recorded per day of discharge in accordance with the recommendations in the VPDES Permit Manual.

**pH** -- The pH limits of **6.0 S.U. minimum and 9.0 S.U. maximum** are required. These limits are based upon the water quality criteria in 9 VAC 25-260-50 for Class III receiving waters

and are in accordance with federal technology-based guidelines, 40 CFR Part 133, for secondary treatment. Grab samples shall be collected once per day of discharge in accordance with the recommendations in the VPDES Permit Manual.

**Total Suspended Solids (TSS)** -- The Total Suspended Solids limits of a **monthly average of 30 mg/L (390 grams per day) and maximum weekly average of 45 mg/L (590 grams per day)** are technology-based secondary treatment standard limits and are unchanged from previous permit. Grab samples shall be collected once per month of discharge in accordance with the recommendations in the VPDES Permit Manual.

**Biochemical Oxygen Demand (BOD<sub>5</sub>)** -- The BOD<sub>5</sub> limits from the previous permit have been continued. The limits were based on the EPA's proposed technology based secondary treatment requirements of a **monthly average limitation of 24 mg/L and a maximum weekly average limitation of 36 mg/L**. These values were proposed prior to the adoption of the final secondary treatment standard levels of 30 mg/L and 45 mg/L. Once effective the limits have not been changed. As an intermittent discharging plant on a receiving stream with a 7Q10 of zero, it is inappropriate to use the Agency's desktop DO model to establish effluent BOD<sub>5</sub> limits. A loading allocation of 0.31 kg/day of BOD<sub>5</sub> is included in Part II of the Roanoke River Basin Water Quality Management Plan, 9VAC25-720-80 (**Attachment E**). The loading limitations of a **monthly average of 310 grams per day and a maximum weekly average of 470 grams per day** meets this allocation. An excerpt of the Plan is included in **Attachment F**. Grab samples shall be collected once per month of discharge in accordance with the recommendations in the VPDES Permit Manual.

### C. Effluent Limitations for Toxic Pollutants

**Ammonia as Nitrogen** -- The WLA spreadsheet was recalculated using updated receiving stream data, effluent data, and water quality standards. Given that the discharge is intermittent, limit evaluation is performed to protect acute water quality standards. The acute WLA for ammonia of 8.6 mg/L was input into the agency STATS program together with one datum value of 9 mg/l to force the program to calculate a limit. The STATS program determined that an acute-based limit of 8.6 mg/L is needed for ammonia as nitrogen. This calculated limit is less stringent than the permit limit for ammonia due to a change in the water quality standards for ammonia. However, the current ammonia limit of a **maximum weekly average and monthly average of 3.6 mg/L** can not be relaxed due to anti-backsliding and is continued in this permit. **Attachment F** contains the spreadsheet used to calculate the stream standards and wasteload allocations and the results of the reasonable potential determination for ammonia (STATS program). **Attachment F** also includes the 2003 WLA spreadsheet and reasonable potential analysis for ammonia that are the basis for the current permit limit. Grab samples shall be collected once per month of discharge in accordance with the recommendations in the VPDES Permit Manual.

**Total Residual Chlorine (TRC)** -- The facility uses chlorination as the disinfection method. TRC limits are water quality based and are calculated in accordance with Guidance Memo 00-2011 procedures. As an intermittent discharge to an intermittent stream, the reasonable potential analysis uses only the acute WLA. The acute WLA was input into the agency STATS.exe statistical software package together with one datum value of 20 mg/l (in



accordance with GM #00-2011) to force the program to calculate the permit limits for TRC. TRC toxic limits for the effluent are a **maximum weekly average of 11.3 µg/l** and **monthly average of 9.4 µg/l**. Monitoring is once per day by grab sample at the effluent in accordance with the recommendations in the VPDES Permit Manual. See **Attachment F** for the WLA spreadsheet and STATS program output

**D. Reduced Monitoring:** All permit applications received after May 4, 1998, are to be considered for reduction in effluent monitoring frequency. GM 98-2005 states that “only facilities having exemplary operations that consistently meet permit requirements should be considered for reduced monitoring.” No effluent monitoring has been reduced in this permit issuance because the permittee received Warning Letters W2003-11-W1011, W2003-12-W-1006, W2004-09-W-1008, W2005-09-W-1004, W2006-09-W-1011, and W2008-04-W-1004 as well as Notice of Violations W2004-02-W-0004, W2004-03-W-0004, and W2006-11-W-0005.

17. **Basis for Sludge Use and Disposal Requirements:** Since the facility will transport septage to the Roanoke Regional Water Pollution Control Plant, there are no limits or monitoring requirements associated with sludge use or disposal beyond compliance with the Sludge Management Plan approved with the issuance of the permit.
18. **Antibacksliding Statement:** All limits in this reissuance are at least as stringent as the limits in the previous permit.
19. **Compliance Schedules:** No compliance schedules are included in this permit.
20. **Special Conditions:** A brief rationale for each special condition contained in the permit is given below.

**A. Additional TRC Limitations and Monitoring Requirements (Part I.B)**

**Rationale:** Required by Sewerage Regulations, 9 VAC 25-790, bacteria standards; other waters. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.

**B. Compliance Reporting under Part I.A and Part I.B (Part I.C.1)**

**Rationale:** Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when toxic pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

**C. 95% Capacity Reopener (Part I.C.2)**

**Rationale:** Required by VPDES Permit Regulation, 9 VAC 25-31-200 B 2 for all POTW and PVOTW permits.

**D. Operation and Maintenance Manual Requirement (Part I.C.3)**

Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190 E.

**E. Reliability Class (Part I.C.4)**

Rationale: Required by Sewage Collection and Treatment Regulations, 9 VAC 25-790 for all municipal facilities.

**F. Licensed Operator Requirement (Part I.C.5)**

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 D and the Code of Virginia § 54.1-2300 et seq, Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.), require licensure of operators.

**G. Sludge Reopener (Part I.C.6)**

Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-220.C.4 for all permits issued to treatment works treating domestic sewage.

**H. CTO, CTC Requirement (Part I.C.7)**

Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790.

**I. Closure Plan (Part I.C.8)**

Rationale: In accordance with State Water Control Law Section 62.1-44.19, this condition is used to notify the owner of the need for a closure plan where a treatment works is being replaced or is expected to close.

**J. Sludge Use and Disposal (Part I.C.9)**

Rationale: The permittee has proposed to periodically transport septage to the Roanoke Regional Water Pollution Control Plant. VPDES Permit Regulation, 9 VAC 25-31-100 P; 220 B2; and 420 and 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal. Technical requirements may be derived from the Department of Health's Biosolids Use Regulations, 12 VAC 5-585-10 et seq. This special condition, in accordance with Guidance Memorandum No. 97-004, clarifies that the Sludge Management Plan approved with the issuance of this permit is an enforceable condition of the permit.

**K. Total Maximum Daily Load (TMDL) Reopener (Part I.C.10)**

Rationale: Section 303(d) of the Clean Water Act requires that total maximum daily loads



(TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.

**L. Conditions Applicable to All VPDES Permits (Part II)**

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-190, requires all VPDES permits to contain or specifically cite the conditions listed.

21. **Changes to the Permit:** Table II summarizes changes in final effluent limitations and monitoring requirements for outfall 001 as compared to the previously issued permit. Permit language has been updated to reflect the recommendations in the VPDES Permit Manual. Permit conditions in the 2003 permit beginning with I.E have been renumbered to I.C due to the deletion of old Part I.C and Part I.D.

**Deletions:**

Old Part I.C – Bacteria Effluent Limitations and Monitoring Requirements – The disinfection demonstration has been completed.

Old Part I.D – Compliance Schedule for Ammonia – Compliance with the final ammonia limitations in the 2003 has been achieved.

Old Part I.E.3 – Indirect Dischargers – The facility does not have any indirect dischargers.

**Additions:**

Part I.C.10 – TMDL Reopener: Added in accordance with the VPDES Permit Manual.

**Changes:**

Old Part I.E.7 – CTC, CTO, and O&M Manual Requirements: This special condition has been split into two separate special conditions, Part I.C.3 – O&M Manual Requirements and Part I.C.7 – CTC, CTO Requirements as recommended in the VPDES Permit Manual.

22. **Variances/Alternate Limits or Conditions:** No variances or alternate limits or conditions are included in this permit.
23. **Regulation of Treatment Works Users:** There are no industrial users contributing to the treatment works.
24. **Public Notice Information required by 9 VAC 25-31-290 B:**

All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Kevin A. Harlow at:

Virginia DEQ  
West Central Regional Office  
3019 Peters Creek Road  
Roanoke, VA 24019  
540-562-6700  
[kaharlow@deq.virginia.gov](mailto:kaharlow@deq.virginia.gov)

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

25. **303(d) Listed Segments (TMDL):** This facility discharges to an unnamed tributary to Wolf Creek. The stream segment at the discharge point is not on the 303(d) list as an impaired water. However, the unnamed tributary to Wolf Creek is in the upstream drainage area of Goose Creek segment VAW-L21R\_GSE01A00 in the Goose Creek watershed (VAW-L21R). Segment VAW-L21R\_GSE01A00 is listed for non-attainment for bacteria in part I of the current approved 303(d) list. A bacteria TMDL is scheduled for development in 2016. The TMDL that will be prepared for this segment will have a WLA for this discharge for E. coli.
26. **Additional Comments:**
- A. **Previous Board Action:** None
  - B. **Staff Comments:** The discharge is not controversial. The discharge is not addressed in any planning document.
  - C. **Public Comments:** No comments were received during the public comment period.



**Table I**  
**DISCHARGE DESCRIPTION**

<b>Outfall Number</b>	<b>Discharge Source</b>	<b>Treatment (Unit by Unit)</b>	<b>Flow (Design) (MGD)</b>
001	Thaxton Elementary School STP	grease trap, septic tanks, dosing tank with dual alternating siphons, distribution box, three sand filters operated in parallel, a nitrification unit, a chlorine contact tank, and tablet dechlorination	0.0035

**TABLE II: OUTFALL 001 CHANGE TABLE FOR THE FINAL LIMITS**

Parameter Changed	Monitoring Requirement Changed		Effluent Limits Changed		Reason for Change	Date
	FROM	TO	FROM	TO		
Ammonia	1/D-Month	1/D-Month	3.6 mg/l Maximum 3.6 mg/L Monthly Avg.	3.6 mg/l Weekly Avg. 3.6 mg/L Monthly Avg.	Limitations on toxics at municipal facilities should be expressed as weekly average and monthly average limits.	KAH 5/14/08



**Table III**  
**BASIS FOR FINAL LIMITATIONS**

OUTFALL: 001

DESIGN FLOW: 0.0035 MGD

( ) Interim Limitations  
(x) Final Limitations

Effective Dates - From: Effective Date  
To: Expiration Date

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/D-Day	Estimate
pH (Standard Units)	1, 3	NA	6.0	NA	9.0	1/D-Day	Grab
BOD <sub>5</sub>	2, 4	24 mg/l 310 g/d	36 mg/l 470 g/d	NA	NA	1/D-Month	Grab
Total Suspended Solids	1	30 mg/l 390 g/d	45 mg/l 590 g/d	NA	NA	1/D-Month	Grab
Ammonia as Nitrogen (NH <sub>3</sub> -N)	3	3.6 mg/l	3.6 mg/l	NA	NA	1/D-Month	Grab
Total Residual Chlorine	3	9.4 µg/l	11.3 µg/l	NA	NA	1/D-Day	Grab

1/D-Month = Once per Discharge Month  
NL = No Limitations, monitoring only  
NA = Not Applicable  
1/D-Day = Once per Discharge Day

The basis for the limitations codes are:

1. Federal Effluent Guidelines: (Secondary Treatment Requirement)
2. Best Professional Judgement
3. Water Quality Standards
4. Roanoke River Basin Water Quality Management Plan, 9VAC25-720-80
5. Other

## **Attachments**

- A. Flow Frequency Memorandum**
- B. Wastewater Treatment Diagrams**
- C. Site Visit Report**
- D. USGS Topographic Map**
- E. Ambient Water Quality Information**
  - **2006 305(b)/303(d) Integrated Report (Excerpt)**
  - **Roanoke River Basin Water Quality Management Plan (excerpt)**
- F. Wasteload and Limit Calculations**
  - **Wasteload Allocation Spreadsheet**
  - **STATS Program Results**
  - **Basis for Ammonia Limits**



## **Attachment A**

### **Flow Frequency Memorandum**

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION  
Water Quality Assessments and Planning  
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination  
Thaxton Elementary School STP - #VA0020869  
TO: Bill Woods, WCRO  
FROM: Paul E. Herman, P.E., WQAP *Paul*  
DATE: December 19, 1997  
COPIES: Ron Gregory, Charles Martin, File

DEQ-WCRO

DEC 22 1997

RECEIVED

KBS

The Thaxton Elementary School STP discharges to an unnamed tributary of the Wolf Creek near Bedford, VA. Flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The values at the discharge point were determined by inspection of the USGS Bedford Quadrangle topographical map which shows the discharge point is on a drainage ditch beside a railroad. The flow frequencies for drainage ditches are 0.0 cfs for the 1Q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and the harmonic mean.

The discharge flows down the ditch to an unnamed tributary of Wolf Creek. This confluence lies just below a pond which is fed by intermittent streams. During periods of low flow, the pond will retain as storage any runoff that enters. During this time, the flow in the stream below the pond will be zero as well.

If you have any questions concerning this analysis, please let me know.

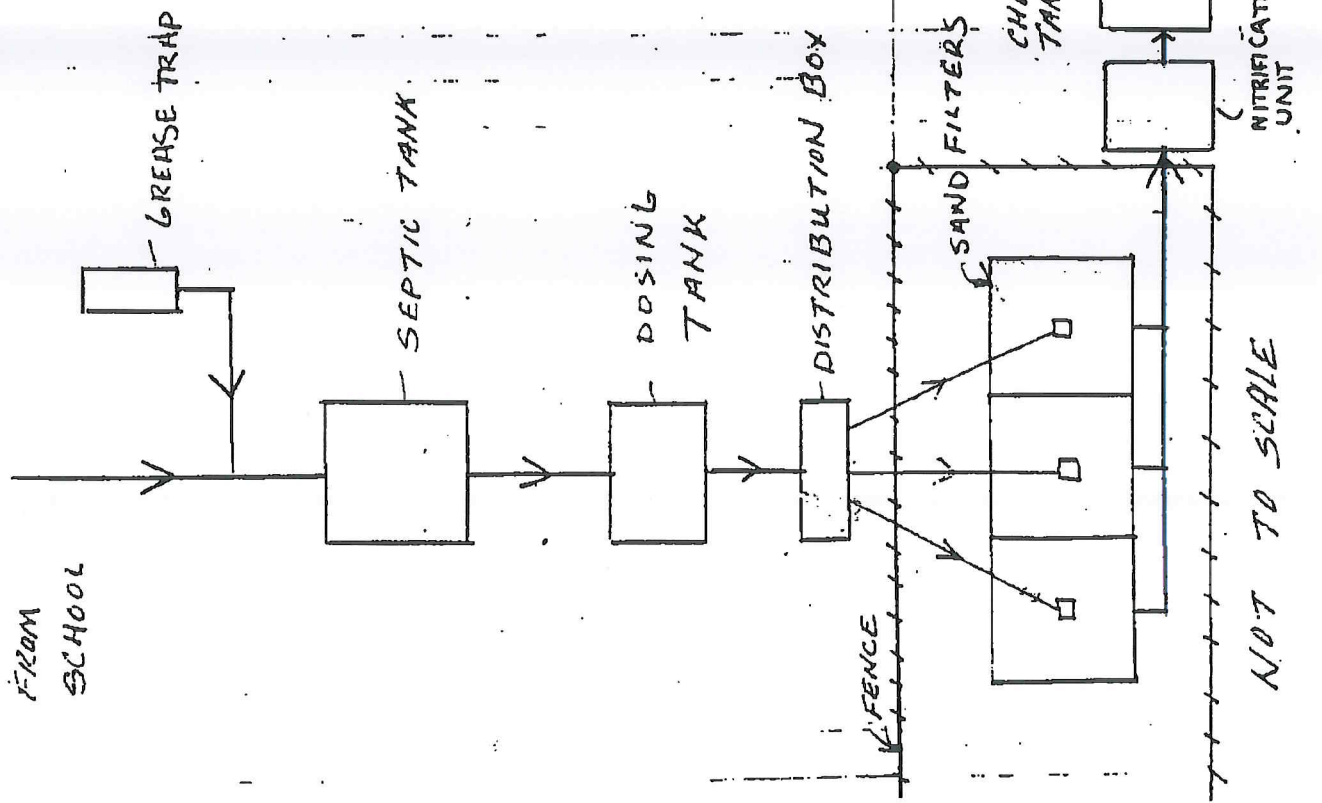
**Attachment B**

**Wastewater Treatment Diagrams**



INFLUENT FROM SCHOOL

SEPTIC TANK / SAND FILTER FROM SCHEME FOR THAXTON ELEM. WWTP



**Attachment C**

**Site Visit Report**

**M E M O R A N D U M**  
**VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**WEST CENTRAL REGIONAL OFFICE**  
**WATER DIVISION**

**3019 Peters Creek Road**

**Roanoke, Virginia 24019-2738**

**SUBJECT:** Site visit for VPDES Permit Reissuance - VA0020869  
Thaxton Elementary School STP

**To:** Permit files VPDES permit VA0020869

**From:** Kevin A. Harlow, Environmental Engineer Sr.

**Date:** February 8, 2008

On Monday, February 8, 2008, the writer performed a site visit at the Thaxton Elementary School STP. Also present during the visit was Jennifer Mitchell, an operator for the Bedford County PSA.

The treatment facility consists of a grease trap, two septic tanks, dosing tank with dual alternating siphons, distribution box, three biological sand filter beds operating in parallel followed by a nitrification unit, chlorine contact tank, and tablet dechlorination.

No actual influent flow rates are available. DMR flow reporting is estimated based on the number of students. Chad Williams noted that the septic tanks and grease traps are pumped as needed. The grease traps and septic tanks were not opened for inspection during this visit. The sand filters and chlorination facilities were all fenced and the gate locked.

As noted above there was no discharge from the facility during our visit so no measurements were recorded from the visit. The discharge is through a PVC pipe to an unnamed tributary to Wolf Creek. The "receiving stream" is essentially a railway ditch.

Test equipment is stored on the truck used by the operator to visit each facility daily. The Operations and Maintenance manual for the facility is maintained by the PSA. The operator was not asked about maintenance records during the visit.



**Attachment D**

**USGS Topographic Map**



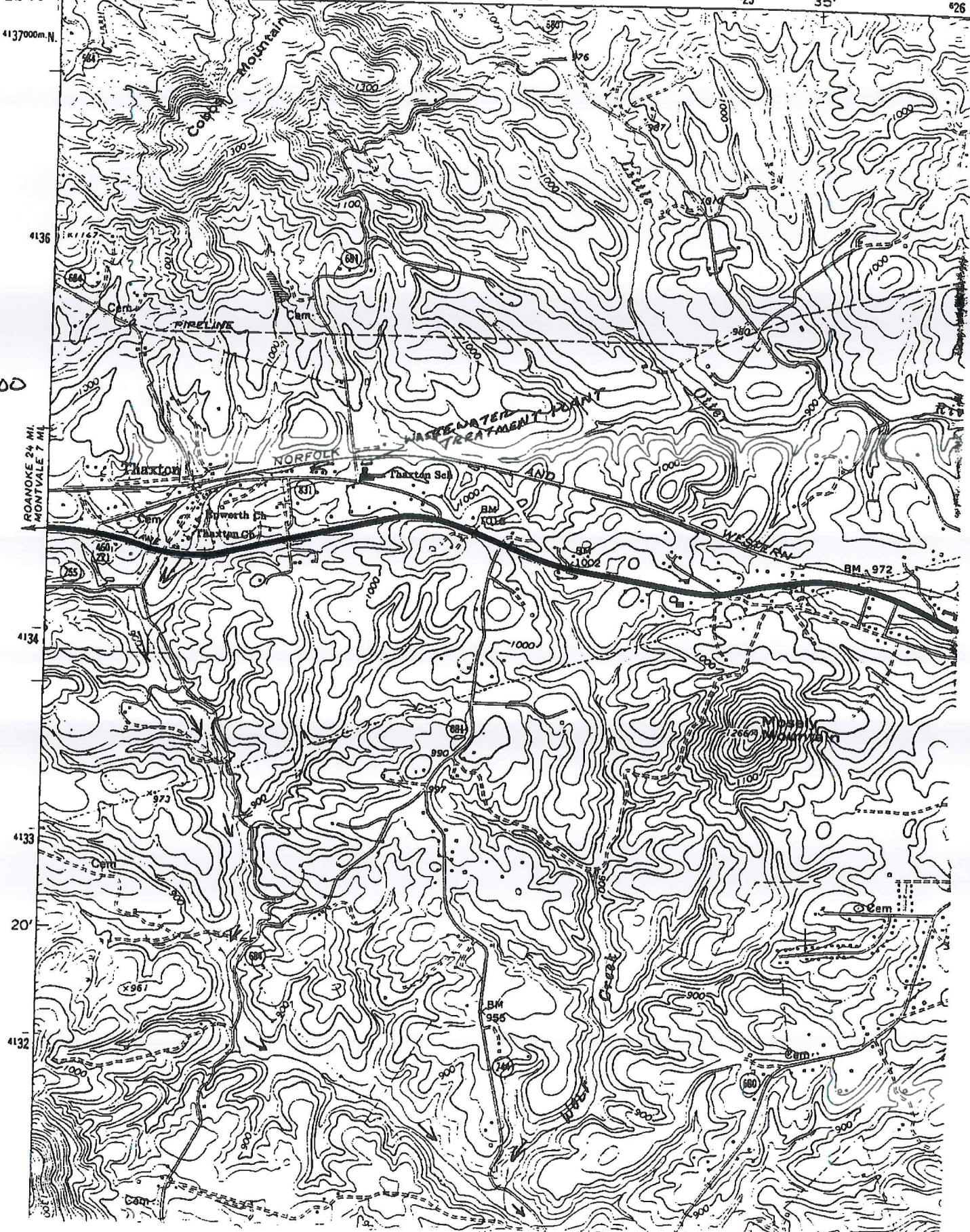
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

BEFORD QUADRANGLE

79°37'30" 622000m E 623 624 625 35' 626  
22°30' 4137000m N



SCALE  
: 24 000





## **Attachment E**

### **Ambient Water Quality Information**

- **2006 305(b)/303(d) Integrated Report (Excerpt)**
- **Roanoke River Basin Water Quality Management Plan (Excerpt)**



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email: [Darryl C. Williams](#)

## 2006 Assessment Information:

[Assessment Unit Description](#)[Use Support Assessment](#)[TMDL Information](#)[Monitoring Station Information](#)

### Assessment Unit Description: *(What's this?)*

**Waterbody Name:** Goose Creek Middle/Bore Auger Creek/Wolf Creek

**Waterbody Type and Size:** RIVER - 154.39 MILES

**Waterbody Location:** Remaining waters in watershed L21R.

**Assessment Unit:** VAW-L21R\_ZZZ01A00

**Assessment Category:** Va. Category 3A: No data are available within the data window of the current assessment to determine if any designated use is attained and the water was not previously listed as impaired.

**Impairments:** None

**Sources:** None

**Comments:** WQS Class III Sec. 5a PWS No current data. These waters are not assessed. No VDH Fish Consumption or Drinking Water Advisories.

[site index](#)

Last updated: Thursday, July 20, 2006 8:33 AM

# Appendix A - List of Impaired (Category 5) Waters in 2006\*

Assessment Unit ID	Waterbody Name	City / County	Assessment Unit Description
<b>Roanoke and Yadkin River Basins</b>			
TMDL Watershed Name: <b>Gills Creek</b>			
TMDL Group ID: <b>00123</b>			
VAW-L12L_GIL02A02	Gills Creek SML Upper	FRANKLIN CO	Gills Creek from the end of Route 665 upstream to its backwaters.
VA Overall AU Category: <b>5D</b>	Impairment	TMDL Group ID	First Listed on 303(d)
Recreation	<b>Escherichia coli</b>	<b>00123</b>	<b>2004</b>
			<b>2002</b>
Sources: Livestock (Grazing or Feeding Operations) On-site Treatment Systems (Septic Systems and Similar Decentralized Systems) Unspecified Domestic Waste Wildlife Other than Waterfowl			
Impairment Specific Comments and/or Impairment Specific VA Category			
Category 4A. 12 or more Escherichia coli (E.coli) bacteria samples. Originally 303(d) Listed in 1998 for FC. Gills Creek Bacteria TMDL Study & Allocations U.S. EPA approved on 5/31/2002, Fed ID: 9472. SWCB approved 6/17/2004. VAW-L11R-01.			
<b>Goose Creek</b>			
TMDL Watershed Name: <b>Goose Creek</b>			
TMDL Group ID: <b>00706</b>			
VAW-L20R_GSE01A00	Goose Creek	BEDFORD CO	Goose Creek mainstem from the North and South Fork confluence downstream to the Bore Auger Creek mouth.
VA Overall AU Category: <b>5A</b>	Impairment	TMDL Group ID	First Listed on 303(d)
Recreation	<b>Fecal Coliform</b>	<b>00706</b>	<b>2004</b>
			<b>2016</b>
Sources: Livestock (Grazing or Feeding Operations) Municipal (Urbanized High Density Area) Unspecified Domestic Waste Wastes from Pets Wildlife Other than Waterfowl			
Impairment Specific Comments and/or Impairment Specific VA Category			
Goose Creek mainstem from the Rocky Branch mouth on downstream to the confluence of Stony Fork Creek.			
<b>Goose Creek</b>			
TMDL Watershed Name: <b>Goose Creek</b>			
TMDL Group ID: <b>00706</b>			
VAW-L21R_GSE01A00	Goose Creek	BEDFORD CO	Goose Creek mainstem from the Rocky Branch mouth on downstream to the confluence of Stony Fork Creek.
VA Overall AU Category: <b>5A</b>	Impairment	TMDL Group ID	First Listed on 303(d)
Recreation	<b>Fecal Coliform</b>	<b>00706</b>	<b>2004</b>
			<b>2016</b>
Sources: Livestock (Grazing or Feeding Operations) Unspecified Domestic Waste Wastes from Pets Wildlife Other than Waterfowl			
Impairment Specific Comments and/or Impairment Specific VA Category			
Goose Creek mainstem from the Rocky Branch mouth on downstream to the confluence of Stony Fork Creek.			

			001	Roanoke River	201.81	TKN, APR-SEP TKN, OCT-MAR	416 832	KG/D KG/D
			001	Roanoke River	201.81	BOD <sub>5</sub> TKN, APR-SEP TKN, OCT-MAR	1173 469 939	KG/D KG/D KG/D
VAW-L04R	VA0077895	Roanoke Moose Lodge	001	Mason Creek	7.79	BOD <sub>5</sub> , JUN-SEP TKN, JUN-SEP	0.24 0.09	KG/D KG/D
VAW-L07R	VA0020842	Bedford County School Board-Stewartsville Elementary School	001	Nat Branch, UT	0.59	BOD <sub>5</sub>	0.5	KG/D
VAW-L14R	VA0029254	Ferrum Water and Sewage Auth. - Ferrum Sewage Treatment Plant	001	Storey Creek	9.78	BOD <sub>5</sub>	14.2	KG/D
VAW-L14R	VA0085952	Rocky Mount Town Sewage Treatment Plant	001	Pigg River	52	BOD <sub>5</sub>	133	KG/D
VAW-L14R	VA0076015	Ronile Incorporated	001	Pigg River	57.24	BOD <sub>5</sub>	14.8	KG/D
VAW-L21R	VA0063738	Bedford County School Board - Staunton River High School	001	Shoulder Run, UT	0.95	BOD <sub>5</sub>	1.8	KG/D
VAW-L21R	VA0020869	Bedford County School Board - Thaxton Elementary School	001	Wolf Creek, UT	0.35	BOD <sub>5</sub>	0.31	KG/D
VAW-L22R	VA0023515	Blue Ridge Regional Jail Auth. - Moneta Adult Detention	001	Mattox Creek, UT	3.76	BOD <sub>5</sub>	1.66	KG/D



## **Attachment F**

### **Wasteload and Limit Calculations**

- **Wasteload Allocation Spreadsheet**
- **STATS Program Results**
- **Basis for Ammonia Limits**

# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Bedford Co. - Thaxton E.S. WWTP

Permit No.: VA0020869

Receiving Stream: UT to Big Otter River

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information			Stream Flows			Mixing Information			Effluent Information		
Mean Hardness (as CaCO3) =	0 mg/L		1Q10 (Annual) =	0 MGD		Annual - 1Q10 Mix =	100 %		Mean Hardness (as CaCO3) =	100 mg/L	
90% Temperature (Annual) =	0 deg C		7Q10 (Annual) =	0 MGD		- 7Q10 Mix =	100 %		90% Temp (Annual) =	20 deg C	
90% Temperature (Wet season) =	0 deg C		30Q10 (Annual) =	0 MGD		- 30Q10 Mix =	100 %		90% Temp (Wet season) =	12 deg C	
90% Maximum pH =	0 SU		1Q10 (Wet season) =	0 MGD		Wet Season - 1Q10 Mix =	100 %		90% Maximum pH =	7.99 SU	
10% Maximum pH =	0 SU		30Q10 (Wet season) =	0 MGD		- 30Q10 Mix =	100 %		10% Maximum pH =	7.38 SU	
Tier Designation (1 or 2) =	2		30Q5 =	0 MGD					Discharge Flow =	0.0035 MGD	
Public Water Supply (PWS) Y/N? =	Y		Harmonic Mean =	0 MGD							
Trout Present Y/N? =	N		Annual Average =	0 MGD							
Early Life Stages Present Y/N? =	Y										

Parameter (ug/l unless noted)	Background Contc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Acenaphthene	0	--	--	1.2E+03	2.7E+03	--	--	1.2E+03	2.7E+03	--	--	1.2E+03	2.7E+03	--	--	1.2E+03
Acrolein	0	--	--	3.2E+02	7.8E+02	--	--	3.2E+02	7.8E+02	--	--	3.2E+02	7.8E+02	--	--	3.2E+02
Acrylonitrile <sup>c</sup>	0	--	--	5.9E-01	6.6E+00	--	--	5.9E-01	6.6E+00	--	--	5.9E-01	6.6E+00	--	--	5.9E-01
Aldrin <sup>c</sup>	0	3.0E+00	--	1.3E-03	1.4E-03	3.0E+00	--	1.3E-03	1.4E-03	7.5E-01	--	1.3E-03	1.4E-03	7.5E-01	--	1.3E-03
Ammonia-N (mg/l) (Yearly)	0	8.57E+00	1.73E+00	--	--	8.6E+00	1.7E+00	--	--	2.14E+00	4.33E-01	--	--	2.1E+00	4.3E-01	--
Ammonia-N (mg/l) (High Flow)	0	8.57E+00	2.47E+00	--	--	8.6E+00	2.5E+00	--	--	2.14E+00	6.17E-01	--	--	2.1E+00	6.2E-01	--
Anthracene	0	--	--	9.6E+03	1.1E+05	--	--	9.6E+03	1.1E+05	--	--	9.6E+03	1.1E+05	--	--	9.6E+03
Antimony	0	--	--	1.4E+01	4.3E+03	--	--	1.4E+01	4.3E+03	--	--	1.4E+01	4.3E+03	--	--	1.4E+01
Arsenic	0	3.4E+02	1.5E+02	1.0E+01	--	3.4E+02	1.5E+02	1.0E+01	--	8.5E+01	3.8E+01	1.0E+01	--	8.5E+01	3.8E+01	1.0E+01
Barium	0	--	--	2.0E+03	--	--	--	2.0E+03	--	--	--	2.0E+03	--	--	--	2.0E+03
Benzene <sup>c</sup>	0	--	--	1.2E+01	7.1E+02	--	--	1.2E+01	7.1E+02	--	--	1.2E+01	7.1E+02	--	--	1.2E+01
Benzidine <sup>c</sup>	0	--	--	1.2E-03	5.4E-03	--	--	1.2E-03	5.4E-03	--	--	1.2E-03	5.4E-03	--	--	1.2E-03
Benzo (a) anthracene <sup>c</sup>	0	--	--	4.4E-02	4.9E-01	--	--	4.4E-02	4.9E-01	--	--	4.4E-02	4.9E-01	--	--	4.4E-02
Benzo (b) fluoranthene <sup>c</sup>	0	--	--	4.4E-02	4.9E-01	--	--	4.4E-02	4.9E-01	--	--	4.4E-02	4.9E-01	--	--	4.4E-02
Benzo (k) fluoranthene <sup>c</sup>	0	--	--	4.4E-02	4.9E-01	--	--	4.4E-02	4.9E-01	--	--	4.4E-02	4.9E-01	--	--	4.4E-02
Benzo (a) pyrene <sup>c</sup>	0	--	--	4.4E-02	4.9E-01	--	--	4.4E-02	4.9E-01	--	--	4.4E-02	4.9E-01	--	--	4.4E-02
Bis(2-Chloroethyl) Ether	0	--	--	3.1E-01	1.4E+01	--	--	3.1E-01	1.4E+01	--	--	3.1E-01	1.4E+01	--	--	3.1E-01
Bis(2-Chloroisopropyl) Ether	0	--	--	1.4E+03	1.7E+05	--	--	1.4E+03	1.7E+05	--	--	1.4E+03	1.7E+05	--	--	1.4E+03
Bromoform <sup>c</sup>	0	--	--	4.4E+01	3.6E+03	--	--	4.4E+01	3.6E+03	--	--	4.4E+01	3.6E+03	--	--	4.4E+01
Butylbenzylphthalate	0	--	--	3.0E+03	5.2E+03	--	--	3.0E+03	5.2E+03	--	--	3.0E+03	5.2E+03	--	--	3.0E+03
Cadmium	0	3.9E+00	1.1E+00	5.0E+00	--	3.9E+00	1.1E+00	5.0E+00	--	9.8E-01	2.8E-01	5.0E-01	--	9.8E-01	2.8E-01	5.0E-01
Carbon Tetrachloride <sup>c</sup>	0	--	--	2.5E+00	4.4E+01	--	--	2.5E+00	4.4E+01	--	--	2.5E+00	4.4E+01	--	--	2.5E+00
Chlordane <sup>c</sup>	0	2.4E+00	4.3E-03	2.1E-02	2.2E-02	2.4E+00	4.3E-03	2.1E-02	2.2E-02	6.0E-01	1.1E-03	2.1E-03	2.2E-03	6.0E-01	1.1E-03	2.1E-03
Chloride	0	8.6E+05	2.3E+05	2.5E+05	--	8.6E+05	2.3E+05	2.5E+05	--	2.2E+05	5.8E+04	2.5E+04	--	2.2E+05	5.8E+04	2.5E+04
TRC	0	1.9E+01	1.1E+01	--	--	1.9E+01	1.1E+01	--	--	4.8E+00	2.8E+00	--	--	4.8E+00	2.8E+00	--
Chlorobenzene	0	--	--	6.8E+02	2.1E+04	--	--	6.8E+02	2.1E+04	--	--	6.8E+02	2.1E+04	--	--	6.8E+02

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane <sup>c</sup>	0	--	--	4.1E+00	3.4E+02	--	--	4.1E+00	3.4E+01	--	--	4.1E-01	3.4E+01	--	--	4.1E-01	3.4E+01	--	--	4.1E-01	3.4E+01
Chloroform <sup>c</sup>	0	--	--	3.5E+02	2.9E+04	--	--	3.5E+02	2.9E+03	--	--	3.5E+01	2.9E+03	--	--	3.5E+01	2.9E+03	--	--	3.5E+01	2.9E+03
2-Chloronaphthalene	0	--	--	1.7E+03	4.3E+03	--	--	1.7E+03	4.3E+02	--	--	1.7E+02	4.3E+02	--	--	1.7E+02	4.3E+02	--	--	1.7E+02	4.3E+02
2-Chlorophenol	0	--	--	1.2E+02	4.0E+02	--	--	1.2E+02	4.0E+01	--	--	1.2E+01	4.0E+01	--	--	1.2E+01	4.0E+01	--	--	1.2E+01	4.0E+01
Chlorpyrifos	0	8.3E-02	4.1E-02	--	--	8.3E-02	4.1E-02	--	--	2.1E-02	1.0E-02	--	--	2.1E-02	1.0E-02	--	--	2.1E-02	1.0E-02	--	--
Chromium III	0	5.7E+02	7.4E+01	--	--	5.7E+02	7.4E+01	--	--	1.4E+02	1.9E+01	--	--	1.4E+02	1.9E+01	--	--	1.4E+02	1.9E+01	--	--
Chromium VI	0	1.6E+01	1.1E+01	--	--	1.6E+01	1.1E+01	--	--	4.0E+00	2.8E+00	--	--	4.0E+00	2.8E+00	--	--	4.0E+00	2.8E+00	--	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	1.0E+02	--	--	--	1.0E+01	--	--	--	1.0E+01	--	--	--	1.0E+01	--
Chrysene <sup>c</sup>	0	--	--	4.4E-02	4.9E-01	--	--	4.4E-02	4.9E-01	--	--	4.4E-03	4.9E-02	--	--	4.4E-03	4.9E-02	--	--	4.4E-03	4.9E-02
Copper	0	1.3E+01	9.0E+00	1.3E+03	--	1.3E+01	9.0E+00	1.3E+03	--	3.4E+00	2.2E+00	1.3E+02	--	3.4E+00	2.2E+00	1.3E+02	--	3.4E+00	2.2E+00	1.3E+02	--
Cyanide	0	2.2E+01	5.2E+00	7.0E+02	2.2E+05	2.2E+01	5.2E+00	7.0E+02	2.2E+04	5.8E+00	1.3E+00	7.0E+01	2.2E+04	5.8E+00	1.3E+00	7.0E+01	2.2E+04	5.8E+00	1.3E+00	7.0E+01	2.2E+04
DDD <sup>c</sup>	0	--	--	8.3E-03	8.4E-03	--	--	8.3E-03	8.4E-04	--	--	8.3E-04	8.4E-04	--	--	8.3E-04	8.4E-04	--	--	8.3E-04	8.4E-04
DDE <sup>c</sup>	0	--	--	5.9E-03	5.9E-03	--	--	5.9E-03	5.9E-03	--	--	5.9E-04	5.9E-04	--	--	5.9E-04	5.9E-04	--	--	5.9E-04	5.9E-04
DDT <sup>c</sup>	0	1.1E+00	1.0E-03	5.9E-03	5.9E-03	1.1E+00	1.0E-03	5.9E-03	5.9E-03	2.8E-01	2.5E-04	5.9E-04	5.9E-04	2.8E-01	2.5E-04	5.9E-04	5.9E-04	2.8E-01	2.5E-04	5.9E-04	5.9E-04
Demeton	0	--	1.0E-01	--	--	--	1.0E-01	--	--	--	2.5E-02	--	--	--	2.5E-02	--	--	--	2.5E-02	--	--
Dibenz(a,h)anthracene <sup>c</sup>	0	--	--	4.4E-02	4.9E-01	--	--	4.4E-02	4.9E-01	--	--	4.4E-03	4.9E-02	--	--	4.4E-03	4.9E-02	--	--	4.4E-03	4.9E-02
Dibutyl phthalate	0	--	--	2.7E+03	1.2E+04	--	--	2.7E+03	1.2E+03	--	--	2.7E+02	1.2E+03	--	--	2.7E+02	1.2E+03	--	--	2.7E+02	1.2E+03
Dichloromethane	0	--	--	4.7E+01	1.6E+04	--	--	4.7E+01	1.6E+03	--	--	4.7E+00	1.6E+03	--	--	4.7E+00	1.6E+03	--	--	4.7E+00	1.6E+03
(Methylene Chloride) <sup>c</sup>	0	--	--	2.7E+03	1.7E+04	--	--	2.7E+03	1.7E+03	--	--	2.7E+02	1.7E+03	--	--	2.7E+02	1.7E+03	--	--	2.7E+02	1.7E+03
1,2-Dichlorobenzene	0	--	--	4.0E+02	2.6E+03	--	--	4.0E+02	2.6E+03	--	--	4.0E+01	2.6E+02	--	--	4.0E+01	2.6E+02	--	--	4.0E+01	2.6E+02
1,3-Dichlorobenzene	0	--	--	4.0E+02	2.6E+03	--	--	4.0E+02	2.6E+02	--	--	4.0E+01	2.6E+02	--	--	4.0E+01	2.6E+02	--	--	4.0E+01	2.6E+02
1,4-Dichlorobenzene	0	--	--	4.0E+01	7.7E-01	--	--	4.0E+01	7.7E-01	--	--	4.0E-02	7.7E-02	--	--	4.0E-02	7.7E-02	--	--	4.0E-02	7.7E-02
3,3-Dichlorobenzidine <sup>c</sup>	0	--	--	5.6E+00	4.6E+02	--	--	5.6E+00	4.6E+01	--	--	5.6E-01	4.6E+01	--	--	5.6E-01	4.6E+01	--	--	5.6E-01	4.6E+01
Dichlorobromomethane <sup>c</sup>	0	--	--	3.8E+00	9.9E+02	--	--	3.8E+00	9.9E+01	--	--	3.8E-01	9.9E+01	--	--	3.8E-01	9.9E+01	--	--	3.8E-01	9.9E+01
1,2-Dichloroethane <sup>c</sup>	0	--	--	3.1E+02	1.7E+04	--	--	3.1E+02	1.7E+03	--	--	3.1E+01	1.7E+03	--	--	3.1E+01	1.7E+03	--	--	3.1E+01	1.7E+03
1,1-Dichloroethylene	0	--	--	7.0E+02	1.4E+05	--	--	7.0E+02	1.4E+04	--	--	7.0E+01	1.4E+04	--	--	7.0E+01	1.4E+04	--	--	7.0E+01	1.4E+04
1,2-trans-dichloroethylene	0	--	--	9.3E+01	7.9E+02	--	--	9.3E+01	7.9E+01	--	--	9.3E+00	7.9E+01	--	--	9.3E+00	7.9E+01	--	--	9.3E+00	7.9E+01
2,4-Dichlorophenol	0	--	--	1.0E+02	--	--	--	1.0E+02	--	--	--	1.0E+01	--	--	--	1.0E+01	--	--	--	1.0E+01	--
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	5.2E+00	3.9E+02	--	--	5.2E+00	3.9E+01	--	--	5.2E-01	3.9E+01	--	--	5.2E-01	3.9E+01	--	--	5.2E-01	3.9E+01
1,2-Dichloropropane <sup>c</sup>	0	--	--	1.0E+01	1.7E+03	--	--	1.0E+01	1.7E+02	--	--	1.0E+00	1.7E+02	--	--	1.0E+00	1.7E+02	--	--	1.0E+00	1.7E+02
1,3-Dichloropropene	0	--	--	5.6E-02	1.4E-03	2.4E-01	5.6E-02	1.4E-03	1.4E-03	6.0E-02	1.4E-02	1.4E-04	1.4E-04	6.0E-02	1.4E-02	1.4E-04	1.4E-04	6.0E-02	1.4E-02	1.4E-04	1.4E-04
Dieldrin <sup>c</sup>	0	--	--	2.3E+04	1.2E+05	--	--	2.3E+04	1.2E+04	--	--	2.3E+03	1.2E+04	--	--	2.3E+03	1.2E+04	--	--	2.3E+03	1.2E+04
Diethyl Phthalate	0	--	--	1.8E+01	5.9E+01	--	--	1.8E+01	5.9E+00	--	--	1.8E+00	5.9E+00	--	--	1.8E+00	5.9E+00	--	--	1.8E+00	5.9E+00
Di-2-Ethylhexyl Phthalate <sup>c</sup>	0	--	--	5.4E+02	2.3E+03	--	--	5.4E+02	2.3E+02	--	--	5.4E+01	2.3E+02	--	--	5.4E+01	2.3E+02	--	--	5.4E+01	2.3E+02
2,4-Dimethylphenol	0	--	--	3.1E+05	2.9E+06	--	--	3.1E+05	2.9E+05	--	--	3.1E+04	2.9E+05	--	--	3.1E+04	2.9E+05	--	--	3.1E+04	2.9E+05
Dimethyl Phthalate	0	--	--	2.7E+03	1.2E+04	--	--	2.7E+03	1.2E+03	--	--	2.7E+02	1.2E+03	--	--	2.7E+02	1.2E+03	--	--	2.7E+02	1.2E+03
Di-n-Butyl Phthalate	0	--	--	7.0E+01	1.4E+04	--	--	7.0E+01	1.4E+03	--	--	7.0E+00	1.4E+03	--	--	7.0E+00	1.4E+03	--	--	7.0E+00	1.4E+03
2,4 Dinitrophenol	0	--	--	1.3E+01	7.7E+02	--	--	1.3E+01	7.7E+01	--	--	1.3E+00	7.7E+01	--	--	1.3E+00	7.7E+01	--	--	1.3E+00	7.7E+01
2-Methyl-4,6-Dinitrophenol	0	--	--	1.1E+00	9.1E+01	--	--	1.1E+00	9.1E+00	--	--	1.1E-01	9.1E+00	--	--	1.1E-01	9.1E+00	--	--	1.1E-01	9.1E+00
2,4-Dinitrotoluene <sup>c</sup>	0	--	--	1.2E-06	1.2E-06	--	--	1.2E-06	1.2E-06	--	--	1.2E-07	1.2E-07	--	--	1.2E-07	1.2E-07	--	--	1.2E-07	1.2E-07
2,4-Dinitrotoluene <sup>c</sup> Dioxin (2,3,7,8- tetrachlorodibenzo-p-dioxin)	0	--	--	4.0E-01	5.4E+00	--	--	4.0E-01	5.4E+00	--	--	4.0E-02	5.4E+01	--	--	4.0E-02	5.4E+01	--	--	4.0E-02	5.4E+01
1,2-Diphenylhydrazine <sup>c</sup>	0	--	--	5.6E-02	1.1E+02	2.2E-01	5.6E-02	1.1E+02	2.4E+02	5.5E-02	1.4E-02	1.1E+01	2.4E+01	5.5E-02	1.4E-02	1.1E+01	2.4E+01	5.5E-02	1.4E-02	1.1E+01	2.4E+01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	1.1E+02	2.4E+02	2.2E-01	5.6E-02	1.1E+02	2.4E+02	5.5E-02	1.4E-02	1.1E+01	2.4E+01	5.5E-02	1.4E-02	1.1E+01	2.4E+01	5.5E-02	1.4E-02	1.1E+01	2.4E+01
Beta-Endosulfan	0	--	--	1.1E+02	2.4E+02	--	--	1.1E+02	2.4E+02	--	--	1.1E+01	2.4E+01	--	--	1.1E+01	2.4E+01	--	--	1.1E+01	2.4E+01
Endosulfan Sulfate	0	--	--	3.6E-02	8.1E-01	8.6E-02	3.6E-02	7.6E-01	8.1E-01	2.2E-02	9.0E-03	7.6E-02	8.1E-02	2.2E-02	9.0E-03	7.6E-02	8.1E-02	2.2E-02	9.0E-03	7.6E-02	8.1E-02
Endrin	0	--	--	7.6E-01	8.1E-01	--	--	7.6E-01	8.1E-01	--	--	7.6E-02	8.1E-02	--	--	7.6E-02	8.1E-02	--	--	7.6E-02	8.1E-02
Endrin Aldehyde	0	--	--	1.2E-07	1.2E-07	--	--	1.2E-07	1.2E-07	--	--	1.2E-07	1.2E-07	--	--	1.2E-07	1.2E-07	--	--	1.2E-07	1.2E-07



Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	3.1E+03	2.9E+04	--	--	3.1E+03	2.9E+04	--	--	3.1E+02	2.9E+03	--	--	3.1E+02	2.9E+03	--	--	3.1E+02	2.9E+03
Fluoranthene	0	--	--	3.0E+02	3.7E+02	--	--	3.0E+02	3.7E+02	--	--	3.0E+01	3.7E+01	--	--	3.0E+01	3.7E+01	--	--	3.0E+01	3.7E+01
Fluorene	0	--	--	1.3E+03	1.4E+04	--	--	1.3E+03	1.4E+04	--	--	1.3E+02	1.4E+03	--	--	1.3E+02	1.4E+03	--	--	1.3E+02	1.4E+03
Foaming Agents	0	--	--	5.0E+02	--	--	--	5.0E+02	--	--	--	5.0E+01	--	--	--	5.0E+01	--	--	--	5.0E+01	--
Guthion	0	--	1.0E-02	--	--	--	1.0E-02	--	--	--	2.5E-03	--	--	--	2.5E-03	--	--	--	2.5E-03	--	--
Heptachlor <sup>c</sup>	0	5.2E-01	3.8E-03	2.1E-03	2.1E-03	5.2E-01	3.8E-03	2.1E-03	2.1E-03	1.3E-01	9.5E-04	2.1E-04	2.1E-04	1.3E-01	9.5E-04	2.1E-04	2.1E-04	1.3E-01	9.5E-04	2.1E-04	2.1E-04
Heptachlor Epoxide <sup>c</sup>	0	5.2E-01	3.8E-03	1.0E-03	1.1E-03	5.2E-01	3.8E-03	1.0E-03	1.1E-03	1.3E-01	9.5E-04	1.0E-04	1.1E-04	1.3E-01	9.5E-04	1.0E-04	1.1E-04	1.3E-01	9.5E-04	1.0E-04	1.1E-04
Hexachlorobenzene <sup>c</sup>	0	--	--	7.5E-03	7.7E-03	--	--	7.5E-03	7.7E-03	--	--	7.5E-04	7.7E-04	--	--	7.5E-04	7.7E-04	--	--	7.5E-04	7.7E-04
Hexachlorobutadiene <sup>c</sup>	0	--	--	4.4E+00	5.0E+02	--	--	4.4E+00	5.0E+02	--	--	4.4E-01	5.0E+01	--	--	4.4E-01	5.0E+01	--	--	4.4E-01	5.0E+01
Hexachlorocyclohexane	0	--	--	3.9E-02	1.3E-01	--	--	3.9E-02	1.3E-01	--	--	3.9E-03	1.3E-02	--	--	3.9E-03	1.3E-02	--	--	3.9E-03	1.3E-02
Alpha-BHC <sup>c</sup>	0	--	--	1.4E-01	4.6E-01	--	--	1.4E-01	4.6E-01	--	--	1.4E-02	4.6E-02	--	--	1.4E-02	4.6E-02	--	--	1.4E-02	4.6E-02
Hexachlorocyclohexane	0	--	--	1.4E-01	4.6E-01	--	--	1.4E-01	4.6E-01	--	--	1.4E-02	4.6E-02	--	--	1.4E-02	4.6E-02	--	--	1.4E-02	4.6E-02
Beta-BHC <sup>c</sup>	0	--	--	1.4E-01	4.6E-01	--	--	1.4E-01	4.6E-01	--	--	1.4E-02	4.6E-02	--	--	1.4E-02	4.6E-02	--	--	1.4E-02	4.6E-02
Hexachlorocyclohexane	0	9.5E-01	--	1.9E-01	6.3E-01	9.5E-01	--	1.9E-01	6.3E-01	2.4E-01	--	1.9E-02	6.3E-02	2.4E-01	--	1.9E-02	6.3E-02	2.4E-01	--	1.9E-02	6.3E-02
Gamma-BHC <sup>c</sup> (Lindane)	0	--	--	2.4E+02	1.7E+04	--	--	2.4E+02	1.7E+04	--	--	2.4E+01	1.7E+03	--	--	2.4E+01	1.7E+03	--	--	2.4E+01	1.7E+03
Hexachlorocyclopentadiene	0	--	--	1.9E+01	8.9E+01	--	--	1.9E+01	8.9E+01	--	--	1.9E+00	8.9E+00	--	--	1.9E+00	8.9E+00	--	--	1.9E+00	8.9E+00
Hexachloroethane <sup>c</sup>	0	--	2.0E+00	--	--	--	2.0E+00	--	--	--	5.0E-01	--	--	--	5.0E-01	--	--	--	5.0E-01	--	--
Hydrogen Sulfide	0	--	--	4.4E-02	4.9E-01	--	--	4.4E-02	4.9E-01	--	--	4.4E-03	4.9E-02	--	--	4.4E-03	4.9E-02	--	--	4.4E-03	4.9E-02
Indeno (1,2,3-cd) pyrene <sup>c</sup>	0	--	--	3.0E+02	--	--	--	3.0E+02	--	--	--	3.0E+01	--	--	--	3.0E+01	--	--	--	3.0E+01	--
Iron	0	--	--	3.6E+02	2.6E+04	--	--	3.6E+02	2.6E+04	--	--	3.6E+01	2.6E+03	--	--	3.6E+01	2.6E+03	--	--	3.6E+01	2.6E+03
Isophorone <sup>c</sup>	0	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--
Kapone	0	1.2E+02	1.4E+01	1.5E+01	--	1.2E+02	1.4E+01	1.5E+01	--	3.0E+01	3.4E+00	1.5E+00	--	3.0E+01	3.4E+00	1.5E+00	--	3.0E+01	3.4E+00	1.5E+00	--
Lead	0	--	1.0E-01	--	--	--	1.0E-01	--	--	--	2.5E-02	--	--	--	2.5E-02	--	--	--	2.5E-02	--	--
Malathion	0	--	--	5.0E+01	--	--	--	5.0E+01	--	--	--	5.0E+00	--	--	--	5.0E+00	--	--	--	5.0E+00	--
Manganese	0	1.4E+00	7.7E-01	5.0E-02	5.1E-02	1.4E+00	7.7E-01	5.0E-02	5.1E-02	3.5E-01	1.9E-01	5.0E-03	5.1E-03	3.5E-01	1.9E-01	5.0E-03	5.1E-03	3.5E-01	1.9E-01	5.0E-03	5.1E-03
Mercury	0	--	--	4.8E+01	4.0E+03	--	--	4.8E+01	4.0E+03	--	--	4.8E+00	4.0E+02	--	--	4.8E+00	4.0E+02	--	--	4.8E+00	4.0E+02
Methyl Bromide	0	--	3.0E-02	1.0E+02	--	--	3.0E-02	1.0E+02	--	--	7.5E-03	1.0E+01	--	--	7.5E-03	1.0E+01	--	--	7.5E-03	1.0E+01	--
Methoxychlor	0	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--
Mirex	0	--	--	6.8E+02	2.1E+04	--	--	6.8E+02	2.1E+04	--	--	6.8E+01	2.1E+03	--	--	6.8E+01	2.1E+03	--	--	6.8E+01	2.1E+03
Monochlorobenzene	0	1.8E+02	2.0E+01	6.1E+02	4.6E+03	1.8E+02	2.0E+01	6.1E+02	4.6E+03	4.8E+01	5.1E+00	6.1E+01	4.6E+02	4.8E+01	5.1E+00	6.1E+01	4.6E+02	4.8E+01	5.1E+00	6.1E+01	4.6E+02
Nickel	0	--	--	1.0E+04	--	--	--	1.0E+04	--	--	--	1.0E+03	--	--	--	1.0E+03	--	--	--	1.0E+03	--
Nitrate (as N)	0	--	--	1.7E+01	1.9E+03	--	--	1.7E+01	1.9E+03	--	--	1.7E+00	1.9E+02	--	--	1.7E+00	1.9E+02	--	--	1.7E+00	1.9E+02
Nitrobenzene	0	--	--	6.9E-03	8.1E+01	--	--	6.9E-03	8.1E+01	--	--	6.9E-04	8.1E+00	--	--	6.9E-04	8.1E+00	--	--	6.9E-04	8.1E+00
N-Nitrosodimethylamine <sup>c</sup>	0	--	--	5.0E+01	1.6E+02	--	--	5.0E+01	1.6E+02	--	--	5.0E+00	1.6E+01	--	--	5.0E+00	1.6E+01	--	--	5.0E+00	1.6E+01
N-Nitrosodiphenylamine <sup>c</sup>	0	--	--	5.0E-02	1.4E+01	--	--	5.0E-02	1.4E+01	--	--	5.0E-03	1.4E+00	--	--	5.0E-03	1.4E+00	--	--	5.0E-03	1.4E+00
N-Nitrosodi-n-propylamine <sup>c</sup>	0	6.5E-02	1.3E-02	--	--	6.5E-02	1.3E-02	--	--	1.6E-02	3.5E-03	--	--	1.6E-02	3.5E-03	--	--	1.6E-02	3.5E-03	--	--
Parathion	0	--	1.4E-02	--	--	--	1.4E-02	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--
PCB-1016	0	--	1.4E-02	--	--	--	1.4E-02	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--
PCB-1221	0	--	1.4E-02	--	--	--	1.4E-02	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--
PCB-1232	0	--	1.4E-02	--	--	--	1.4E-02	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--
PCB-1242	0	--	1.4E-02	--	--	--	1.4E-02	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--
PCB-1248	0	--	1.4E-02	--	--	--	1.4E-02	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--
PCB-1254	0	--	1.4E-02	--	--	--	1.4E-02	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--
PCB-1260	0	--	1.4E-02	--	--	--	1.4E-02	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--	--	3.5E-03	--	--
PCB Total <sup>c</sup>	0	--	--	1.7E-03	1.7E-03	--	--	1.7E-03	1.7E-03	--	--	1.7E-04	1.7E-04	--	--	1.7E-04	1.7E-04	--	--	1.7E-04	1.7E-04



Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Pentachlorophenol <sup>c</sup>	0	1.3E+01	9.8E+00	2.8E+00	8.2E+01	1.3E+01	9.8E+00	2.8E+00	8.2E+01	3.2E+00	2.5E+00	2.8E-01	8.2E+00	3.2E+00	2.5E+00	2.8E-01
Phenol	0	--	--	2.1E+04	4.6E+06	--	--	2.1E+04	4.6E+06	--	--	2.1E+03	4.6E+05	--	--	2.1E+03
Pyrene	0	--	--	9.6E+02	1.1E+04	--	--	9.6E+02	1.1E+04	--	--	9.6E+01	1.1E+03	--	--	9.6E+01
Radionuclides (pCi/l except Beta/Photon)	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gross Alpha Activity	0	--	--	1.5E+01	1.5E+01	--	--	1.5E+01	1.5E+01	--	--	1.5E+00	1.5E+00	--	--	1.5E+00
Beta and Photon Activity (mrem/yr)	0	--	--	4.0E+00	4.0E+00	--	--	4.0E+00	4.0E+00	--	--	4.0E-01	4.0E-01	--	--	4.0E-01
Strontium-90	0	--	--	8.0E+00	8.0E+00	--	--	8.0E+00	8.0E+00	--	--	8.0E-01	8.0E-01	--	--	8.0E-01
Tritium	0	--	--	2.0E+04	2.0E+04	--	--	2.0E+04	2.0E+04	--	--	2.0E+03	2.0E+03	--	--	2.0E+03
Selenium	0	2.0E+01	5.0E+00	1.7E+02	1.1E+04	2.0E+01	5.0E+00	1.7E+02	1.1E+04	5.0E+00	1.3E+00	1.7E+01	1.1E+03	5.0E+00	1.3E+00	1.7E+01
Silver	0	3.4E+00	--	--	--	3.4E+00	--	--	--	8.6E-01	--	--	--	8.6E-01	--	--
Sulfate	0	--	--	2.5E+05	--	--	--	2.5E+05	--	--	--	2.5E+04	--	--	--	2.5E+04
1,1,2,2-Tetrachloroethane <sup>c</sup>	0	--	--	1.7E+00	1.1E+02	--	--	1.7E+00	1.1E+02	--	--	1.7E-01	1.1E+01	--	--	1.7E-01
Tetrachloroethylene <sup>c</sup>	0	--	--	8.0E+00	8.9E+01	--	--	8.0E+00	8.9E+01	--	--	8.0E-01	8.9E+00	--	--	8.0E-01
Thallium	0	--	--	1.7E+00	6.3E+00	--	--	1.7E+00	6.3E+00	--	--	1.7E-01	6.3E-01	--	--	1.7E-01
Toluene	0	--	--	6.8E+03	2.0E+05	--	--	6.8E+03	2.0E+05	--	--	6.8E+02	2.0E+04	--	--	6.8E+02
Total dissolved solids	0	--	--	5.0E+05	--	--	--	5.0E+05	--	--	--	5.0E+04	--	--	--	5.0E+04
Toxaphene <sup>c</sup>	0	7.3E-01	2.0E-04	7.3E-03	7.5E-03	7.3E-01	2.0E-04	7.3E-03	7.5E-03	1.8E-01	5.0E-05	7.3E-04	7.5E-04	1.8E-01	5.0E-05	7.3E-04
Tributyltin	0	4.6E-01	6.3E-02	--	--	4.6E-01	6.3E-02	--	--	1.2E-01	1.6E-02	--	--	1.2E-01	1.6E-02	--
1,2,4-Trichlorobenzene	0	--	--	2.6E+02	9.4E+02	--	--	2.6E+02	9.4E+02	--	--	2.6E+01	9.4E+01	--	--	2.6E+01
1,1,2-Trichloroethane <sup>c</sup>	0	--	--	6.0E+00	4.2E+02	--	--	6.0E+00	4.2E+02	--	--	6.0E-01	4.2E+01	--	--	6.0E-01
Trichloroethylene <sup>c</sup>	0	--	--	2.7E+01	8.1E+02	--	--	2.7E+01	8.1E+02	--	--	2.7E+00	8.1E+01	--	--	2.7E+00
2,4,6-Trichlorophenol <sup>c</sup>	0	--	--	2.1E+01	6.5E+01	--	--	2.1E+01	6.5E+01	--	--	2.1E+00	6.5E+00	--	--	2.1E+00
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	5.0E+01	--	--	--	5.0E+01	--	--	--	5.0E+00	--	--	--	5.0E+00
Vinyl Chloride <sup>c</sup>	0	--	--	2.3E-01	6.1E+01	--	--	2.3E-01	6.1E+01	--	--	2.3E-02	6.1E+00	--	--	2.3E-02
Zinc	0	1.2E+02	1.2E+02	9.1E+03	6.9E+04	1.2E+02	1.2E+02	9.1E+03	6.9E+04	2.9E+01	3.0E+01	9.1E+02	6.9E+03	2.9E+01	3.0E+01	9.1E+02

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.  
Antidegradation WLAs are based upon a complete mix.  
Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic  
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	1.4E+00
Arsenic	1.0E+00
Barium	2.0E+02
Cadmium	1.7E-01
Chromium III	1.1E+01
Chromium VI	1.6E+00
Copper	1.3E+00
Iron	3.0E+01
Lead	1.5E+00
Manganese	5.0E+00
Mercury	5.0E-03
Nickel	3.0E+00
Selenium	7.5E-01
Silver	3.4E-01
Zinc	1.2E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

5/22/2008 9:20:24 AM

Facility = Thaxton Elementary School WWTP - VA0020869

Chemical = Ammonia

Chronic averaging period = 30

WLAa = 8.6

WLAc =

Q.L. = .2

# samples/mo. = 1

# samples/wk. = 1

#### Summary of Statistics:

# observations = 1

Expected Value = 9

Variance = 29.16

C.V. = 0.6

97th percentile daily values = 21.9007

97th percentile 4 day average = 14.9741

97th percentile 30 day average = 10.8544

# < Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity

Maximum Daily Limit = 8.6

Average Weekly limit = 8.6

Average Monthly Limit = 8.6

The data are:

5/22/2008 9:21:20 AM

Facility = Thaxton Elementary School WWTP - VA0020869

Chemical = TRC

Chronic averaging period = 4

WLAa = 19

WLAc =

Q.L. = 100

# samples/mo. = 30

# samples/wk. = 8

#### Summary of Statistics:

# observations = 1

Expected Value = 20000

Variance = 1440000

C.V. = 0.6

97th percentile daily values = 48668.3

97th percentile 4 day average = 33275.8

97th percentile 30 day average = 24121.0

# < Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity

Maximum Daily Limit = 19

Average Weekly limit = 11.3335966321422

Average Monthly Limit = 9.4168021134859

The data are:

20000



THIS IS A WORK IN PROGRESS UPDATING FOR WQS CHANGES jkw 1/11/01  
Calculation of Waste Load Allocations using OWRM guidance memo 00-2011  
This spreadsheet uses the Fractional Complete Mix calculated by the 3-95 Mixing Model

WLA Analysis For: Thaxton Elementary School STP - VA0020869									
Stream: UT to Wolf Creek					Date: 03/21/03				
Effluent Information					Hardness				
Mean Hardness =	30	mg/L (Default)	Mean Hardness =	30	mg/L	acute: 30	Mix Hardness		
Stream NH3 =	0	mg/L	Effluent NH3 =	0	mg/L	chronic: 30	acute: 30		
90% Temperature =	24.7	C	90% Temperature =	20	C	7Q10 Ratio: 1	chronic: 30		
90% pH =	8.3	SU	90% pH =	8.2	SU	1Q10 Ratio: 1	* WLAa		
Fractional 7Q10 =	0	MGD (100%)	Original Flow =	0.004	MGD		Coefficient =		
Fractional 1Q10 =	0	MGD (100%)					Acute IWC =		
Harmonic mean =	0	Carcinogen					Chronic IWC =		
30Q5 Flow =	0	Non-carcinogen					Harmonic ratio: 1		
Annual Average =	0	Dioxin only					30Q5 ratio: 1		
R(iver),L(ake) or S(torm):	R	R, L, S					Annual Average ratio: 1		
Trout Present?	N	Y, N							
Public Water Supply:	Y	Y, N							
					Aquatic Protection				
					Freshwater Criteria				
					Acute				
					Criteria				
					3.610				
					19				
					Chronic				
					Criteria				
					0.823				
					11				
					Human Health Criteria				
					PWS				
					Criteria				
					None				
					None				
					Other Waters				
					Criteria				
					None				
					None				
					Acute				
					WLA				
					3.61				
					19.00				
					Chronic				
					WLA				
					0.82				
					11.00				
					PWS				
					WLA				
					NA				
					NA				
					Other Waters				
					WLA				
					NA				
					NA				

Parameter and Form  
Ammonia (mg/l as N)  
Chlorine

Stats - Ammonia 2003.txt

3/31/2003 2:56:45 PM

Facility = Thaxton E.S. STP  
Chemical = Ammonia  
Chronic averaging period = 30  
WLAa = 3.61  
WLAC =  
Q.L. = .2  
# samples/mo. = 1  
# samples/wk. = 1

Summary of Statistics:

# observations = 1  
Expected Value = 9  
Variance = 29.16  
C.V. = 0.6  
97th percentile daily values = 21.9007  
97th percentile 4 day average = 14.9741  
97th percentile 30 day average = 10.8544  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity  
Maximum Daily Limit = 3.61  
Average Weekly limit = 3.61  
Average Monthly Limit = 3.61

The data are:

9

**State "FY2003 Transmittal Checklist" to Assist in Targeting  
Municipal and Industrial Individual NPDES Draft Permits for Review**

**Part I. State Draft Permit Submission Checklist**

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Thaxton Elementary School STP

NPDES Permit Number: VA0020869

Permit Writer Name: Kevin A. Harlow

Date: May 19, 2008

Major ☐Minor ☒Industrial ☐Municipal ☒

**I.A. Draft Permit Package Submittal Includes:**

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?		X	
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?		X	
9. Permit Rating Sheet for new or modified industrial facilities?			X

**I.B. Permit/Facility Characteristics**

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		



I.B. Permit/Facility Characteristics – cont. (FY2003)	Yes	No	N/A
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet <b>or</b> permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?		X	
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

## Part II. NPDES Draft Permit Checklist (FY2003)

### Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

#### II.A. Permit Cover Page/Administration

	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

#### II.B. Effluent Limits – General Elements

	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

#### II.C. Technology-Based Effluent Limits (POTWs)

	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

#### II.D. Water Quality-Based Effluent Limits

	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?	X		



<b>II.D. Water Quality-Based Effluent Limits – cont. (FY2003)</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

<b>II.E. Monitoring and Reporting Requirements</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

<b>II.F. Special Conditions</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Does the permit include appropriate biosolids use/disposal requirements?			X
2. Does the permit include appropriate storm water program requirements?			X




II.F. Special Conditions – cont. (FY2003)	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the “Nine Minimum Controls”?			X
b. Does the permit require development and implementation of a “Long Term Control Plan”?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the <b>permit</b> contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		
<b>List of Standard Conditions – 40 CFR 122.41</b>			
Duty to comply	Property rights	Reporting Requirements	
Duty to reapply	Duty to provide information	Planned change	
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance	
not a defense	Monitoring and records	Transfers	
Duty to mitigate	Signatory requirement	Monitoring reports	
Proper O & M	Bypass	Compliance schedules	
Permit actions	Upset	24-Hour reporting	
		Other non-compliance	
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

### Part III. Signature Page (FY2003)

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Kevin A. Harlow</u>
Title	<u>Environmental Engineer, Sr.</u>
Signature	<u></u>
Date	<u>May 19, 2008</u>